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PD - 1997-02-18  
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OPD - 1995-08-07  
TI - ORIGINAL ILLUMINATING DEVICE FOR SCANNER  
IN - KAWAI TSUTOMU;ASANO SHINYA;KIKUCHI SHOJI  
PA - CANON KK  
IC - G06T1/00 ; H04N1/04

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TI - Illumination appts of scanner - illuminates both ends of document with high intensity light beam compared with centre section  
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PA - (CANO ) CANON KK  
IC - G06T1/00 ;H04N1/04  
AB - J09050510 The appts has a pair of LED arrays (11,12) that consists of a number of LED chips (1a). The LED chips are arranged in a straight line at equal intervals.  
- The optical axis (1b) of the LED arrays is inclined towards the surface of the document so that both ends of the document is illuminated with high density light beam compared with the center section. The reflected light beam from the document is read by a sensor through a lens.  
- ADVANTAGE - Enables correction of shading characteristic of reading lens that condenses reflected light from document. Obtains uniform output signal from sensor. Eliminates need for shading plate. Prevents reduction of absolute quantity of light.  
- (Dwg.2/6)  
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- AB - PROBLEM TO BE SOLVED: To execute shading correction without reducing absolute light quantity by inclining the optical axes of plural light emitting element bodies to the outside of a face rectangular to the face of an original and increasing illuminance on both the end sides of a reading line.
- SOLUTION: Two LED arrays (light emitting element bodies) 11, 12 illuminate an original 2 in each reading line 2a and reflected light from the original 2 is converged to a scanner sensor 4 through a reading lens 3. Respective LED arrays 11, 12 are formed so as to be almost the same length by arraying plural LED chips (light emitting elements) 1a straight at an equal interval and arranged in parallel with the reading line 2a of the original 2 to illuminate the line 2a front the upper oblique part. The optical axes 1b of the arrays 11, 12 are inclined from the face rectangular to the original 2 by an angle  $\alpha$  so that the abutted side end parts of the arrays 11, 12 are separated from the reading face of the original 2 and the other end sides are approached to the reading face and the illuminance distribution is set up so that illuminating light quantity is small on the center part of reading width W1 and is increased on both the end sides.

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